

Appendix A.

Each experimental dataset is represented in the form of (target project \Rightarrow source project) in this paper.

Table 1: The F1 in 15% target project datas

Source⇒Target	NB	adaboost	NN	NB+WC	NN+WC	DTB	Tsbagging
synapse-1.2⇒poi-2.0	0.21693	0.21873	0.21459	0.20889	0.20740	0.21406	0.23694
ant-1.6⇒poi-2.0	0.22963	0.23248	0.22287	0.22775	0.22391	0.20765	0.23422
camel-1.0⇒poi-2.0	0.20672	0.20672	0.21371	0.20742	0.20862	0.21229	0.21602
log4j-1.1⇒poi-2.0	0.21097	0.21097	0.21715	0.21633	0.21824	0.20555	0.23494
jedit-4.0.0⇒poi-2.0	0.22215	0.27816	0.21141	0.21793	0.21456	0.20702	0.23645
xerces-1.2⇒poi-2.0	0.03420	0.03420	0.00392	0.09570	0.02181	0.10784	0.30690
poi-2.0⇒synapse-1.2	0.54660	0.54660	0.59014	0.53595	0.54241	0.58250	0.54787
ant-1.6⇒synapse-1.2	0.60116	0.55934	0.59120	0.58981	0.59310	0.59125	0.58973
camel-1.0⇒synapse-1.2	0.51171	0.51171	0.52083	0.51249	0.51986	0.54917	0.53828
log4j-1.1⇒synapse-1.2	0.53645	0.53645	0.54527	0.55172	0.55216	0.56258	0.57240
jedit-4.0.0⇒synapse-1.2	0.59245	0.60616	0.58148	0.58368	0.57969	0.58891	0.56904
xerces-1.2⇒synapse-1.2	0.09605	0.09605	0.09133	0.10769	0.09505	0.14233	0.46483
poi-2.0⇒ant-1.6	0.51504	0.51504	0.51600	0.50466	0.51474	0.50059	0.52528
synapse-1.2⇒ant-1.6	0.50586	0.51445	0.50565	0.52187	0.52114	0.52141	0.53755
camel-1.0⇒ant-1.6	0.41543	0.41543	0.41897	0.42734	0.43520	0.46126	0.47368
log4j-1.1⇒ant-1.6	0.50188	0.50188	0.50356	0.51869	0.51861	0.54114	0.54228
jedit-4.0.0⇒ant-1.6	0.55014	0.58331	0.55087	0.56847	0.56800	0.54585	0.56526
xerces-1.2⇒ant-1.6	0.09455	0.09455	0.17726	0.14754	0.24714	0.30967	0.50417
poi-2.0⇒camel-1.0	0.45885	0.45885	0.46633	0.51939	0.52088	0.53341	0.51599
synapse-1.2⇒camel-1.0	0.46720	0.44736	0.46597	0.50115	0.50207	0.50628	0.50358
ant-1.6⇒camel-1.0	0.42921	0.36418	0.43127	0.49158	0.49448	0.50748	0.49195
log4j-1.1⇒camel-1.0	0.46468	0.46468	0.46995	0.51155	0.51072	0.51333	0.51548
jedit-4.0.0⇒camel-1.0	0.40750	0.41008	0.40652	0.46659	0.47109	0.50134	0.46225
xerces-1.2⇒camel-1.0	0.11908	0.11908	0.05385	0.20851	0.19383	0.14993	0.47231
poi-2.0⇒log4j-1	0.58950	0.58950	0.59397	0.58852	0.59297	0.53237	0.58286
synapse-1.2⇒log4j-1	0.61953	0.60099	0.59674	0.61149	0.61528	0.58504	0.60243
ant-1.6⇒log4j-1	0.71516	0.71791	0.71323	0.69483	0.67631	0.63445	0.64854
camel-1.0⇒log4j-1	0.54053	0.54053	0.54665	0.53921	0.54324	0.56348	0.54541
jedit-4.0.0⇒log4j-1	0.52924	0.52523	0.58965	0.63529	0.66327	0.62366	0.60732
xerces-1.2⇒log4j-1	0.10235	0.10235	0.15162	0.10108	0.15547	0.20119	0.55011
poi-2.0⇒jedit-4.0	0.48248	0.48248	0.46536	0.48011	0.49369	0.50174	0.51230
synapse-1.2⇒jedit-4.0	0.44256	0.43796	0.46249	0.45721	0.47944	0.49506	0.47609
ant-1.6⇒jedit-4.0	0.53958	0.49645	0.54081	0.52806	0.53757	0.53675	0.53698
camel-1.0⇒jedit-4.0	0.37449	0.37449	0.43318	0.38880	0.44748	0.44796	0.46533
log4j-1.1⇒jedit-4.0	0.45357	0.45357	0.46469	0.46913	0.47622	0.48590	0.48499
xerces-1.2⇒jedit-4.0	0.06583	0.06583	0.52178	0.07191	0.51821	0.50973	0.50487
poi-2.0⇒xerces-1.2	0.26486	0.26486	0.26120	0.30810	0.30412	0.23711	0.30942
synapse-1.2⇒xerces-1.2	0.20511	0.23249	0.21449	0.22143	0.22070	0.19993	0.25847
ant-1.6⇒xerces-1.2	0.25349	0.26784	0.25193	0.28404	0.28994	0.27164	0.32317
camel-1.0⇒xerces-1.2	0.14400	0.14400	0.15381	0.16389	0.17540	0.18165	0.24017
log4j-1.1⇒xerces-1.2	0.22393	0.22393	0.22342	0.28556	0.28501	0.23570	0.30555
jedit-4.0.0⇒xerces-1.2	0.24285	0.27615	0.25402	0.28230	0.28090	0.22451	0.30917
Average	0.37437	0.37436	0.39069	0.39413	0.41024	0.41026	0.45525

Table 2: The MCC in 15% target project datas

Source⇒Target	NB	adaboost	NN	NB+WC	NN+WC	DTB	Tsbbing
synapse-1.2⇒poi-2.0	0.04659	0.05218	0.03902	0.02094	0.01674	0.04017	0.08655
ant-1.6⇒poi-2.0	0.07001	0.07751	0.05316	0.06574	0.05514	0.02188	0.07801
camel-1.0⇒poi-2.0	0.00379	0.00379	0.03819	0.00746	0.01393	0.03194	0.04740
log4j-1.1⇒poi-2.0	0.03082	0.03082	0.05021	0.04816	0.05456	0.02020	0.08751
jedit-4.0.0⇒poi-2.0	0.04495	0.15032	0.02146	0.03456	0.02759	0.01266	0.07243
xerces-1.2⇒poi-2.0	-0.05125	-0.05125	-0.08175	0.00733	-0.06523	0.00590	0.20199
poi-2.0⇒synapse-1.2	0.23656	0.23656	0.33558	0.19632	0.21802	0.30926	0.23708
ant-1.6⇒synapse-1.2	0.34686	0.29690	0.32920	0.32536	0.33190	0.33161	0.33882
camel-1.0⇒synapse-1.2	0.08038	0.08038	0.11162	0.08465	0.11090	0.22164	0.17905
log4j-1.1⇒synapse-1.2	0.19658	0.19658	0.21828	0.23636	0.23694	0.26801	0.29093
jedit-4.0.0⇒synapse-1.2	0.34939	0.37140	0.33413	0.32719	0.31549	0.32838	0.29801
xerces-1.2⇒synapse-1.2	-0.00326	-0.00326	-0.00332	-0.03605	-0.01171	-0.01622	0.22440
poi-2.0⇒ant-1.6	0.30474	0.30474	0.30935	0.28521	0.30594	0.28546	0.32308
synapse-1.2⇒ant-1.6	0.29061	0.30088	0.29137	0.32064	0.31906	0.31893	0.34124
camel-1.0⇒ant-1.6	0.07018	0.07018	0.08443	0.11958	0.14660	0.22242	0.24577
log4j-1.1⇒ant-1.6	0.28212	0.28212	0.28648	0.31498	0.31519	0.35305	0.34967
jedit-4.0.0⇒ant-1.6	0.35871	0.41093	0.36008	0.39158	0.39187	0.35393	0.38612
xerces-1.2⇒ant-1.6	0.02182	0.02182	0.02375	0.02674	0.06008	0.10263	0.27853
poi-2.0⇒camel-1.0	0.04496	0.04496	0.06854	0.13357	0.13421	0.13798	0.13570
synapse-1.2⇒camel-1.0	0.04688	0.01933	0.04495	0.10633	0.10833	0.09883	0.10611
ant-1.6⇒camel-1.0	0.04721	0.09551	0.05144	0.10804	0.11155	0.12334	0.11053
log4j-1.1⇒camel-1.0	0.07892	0.07892	0.08713	0.10630	0.10365	0.10861	0.11339
jedit-4.0.0⇒camel-1.0	0.04857	0.09640	0.05972	0.07586	0.08490	0.11409	0.07812
xerces-1.2⇒camel-1.0	-0.01659	-0.01659	-0.10390	0.00016	-0.00504	-0.08476	0.06540
poi-2.0⇒log4j-1	0.34972	0.34972	0.35503	0.35085	0.35555	0.23699	0.33090
synapse-1.2⇒log4j-1	0.38475	0.36456	0.35842	0.37212	0.38660	0.31815	0.37756
ant-1.6⇒log4j-1	0.59342	0.63266	0.56517	0.52520	0.48576	0.42210	0.50346
camel-1.0⇒log4j-1	0.20451	0.20451	0.21893	0.19945	0.21107	0.25947	0.20912
jedit-4.0.0⇒log4j-1	0.40580	0.33282	0.44343	0.45428	0.48217	0.39470	0.41144
xerces-1.2⇒log4j-1	0.04404	0.04404	0.02168	0.02878	0.01872	-0.02838	0.33010
poi-2.0⇒jedit-4.0	0.25754	0.25754	0.23182	0.25715	0.27907	0.29927	0.31109
synapse-1.2⇒jedit-4.0	0.18904	0.17776	0.23579	0.22115	0.26810	0.29585	0.25511
ant-1.6⇒jedit-4.0	0.37043	0.30097	0.36711	0.35268	0.36362	0.35846	0.36005
camel-1.0⇒jedit-4.0	-0.00530	-0.00530	0.17347	0.04160	0.20644	0.20924	0.24378
log4j-1.1⇒jedit-4.0	0.20939	0.20939	0.23326	0.24377	0.25877	0.27377	0.27023
xerces-1.2⇒jedit-4.0	-0.07628	-0.07628	0.33699	-0.09949	0.32308	0.31095	0.31327
poi-2.0⇒xerces-1.2	0.06724	0.06724	0.06054	0.12141	0.11419	-0.03749	0.12921
synapse-1.2⇒xerces-1.2	-0.02888	0.02930	-0.00990	-0.01050	-0.01594	-0.07297	0.05125
ant-1.6⇒xerces-1.2	0.07842	0.12117	0.07635	0.11754	0.12440	0.08072	0.17900
camel-1.0⇒xerces-1.2	-0.22809	-0.22809	-0.21200	-0.19170	-0.16200	-0.12824	0.00480
log4j-1.1⇒xerces-1.2	-0.02278	-0.02278	-0.02399	0.08287	0.08178	-0.01724	0.14794
jedit-4.0.0⇒xerces-1.2	0.06937	0.10106	0.07907	0.11302	0.10609	-0.00024	0.14148
Average	0.13790	0.14313	0.15524	0.15446	0.17305	0.16393	0.22013

Table 3: The g-measure in 15% target project datas

Source⇒Target	NB	adaboost	NN	NB+WC	NN+WC	DTB	Tsbagging
synapse-1.2⇒poi-2.0	0.37978	0.38917	0.37083	0.37365	0.36911	0.41470	0.50306
ant-1.6⇒poi-2.0	0.49060	0.55866	0.47154	0.48384	0.46853	0.49148	0.49303
camel-1.0⇒poi-2.0	0.19596	0.19596	0.21075	0.20197	0.21828	0.34480	0.29397
log4j-1.1⇒poi-2.0	0.38523	0.38523	0.38822	0.36790	0.37124	0.43346	0.45466
jedit-4.0.0⇒poi-2.0	0.50928	0.61322	0.49749	0.49297	0.49031	0.47657	0.52239
xerces-1.2⇒poi-2.0	0.05022	0.05022	0.00587	0.14541	0.03385	0.17954	0.56967
poi-2.0⇒synapse-1.2	0.58754	0.58754	0.67172	0.49559	0.54416	0.55605	0.52322
ant-1.6⇒synapse-1.2	0.66425	0.65515	0.65893	0.64992	0.65119	0.65525	0.64187
camel-1.0⇒synapse-1.2	0.18380	0.18380	0.24688	0.19169	0.25475	0.38402	0.38293
log4j-1.1⇒synapse-1.2	0.48096	0.48096	0.47874	0.47855	0.47277	0.54938	0.56176
jedit-4.0.0⇒synapse-1.2	0.68288	0.69459	0.67401	0.66618	0.65798	0.65419	0.64564
xerces-1.2⇒synapse-1.2	0.10611	0.10611	0.09961	0.12511	0.10618	0.16850	0.54312
poi-2.0⇒ant-1.6	0.58395	0.58395	0.57585	0.56867	0.57333	0.52711	0.60425
synapse-1.2⇒ant-1.6	0.53381	0.58095	0.52854	0.57420	0.57190	0.57707	0.62657
camel-1.0⇒ant-1.6	0.23678	0.23678	0.24841	0.23912	0.27818	0.37900	0.43903
log4j-1.1⇒ant-1.6	0.55704	0.55704	0.55706	0.58494	0.58394	0.64095	0.64653
jedit-4.0.0⇒ant-1.6	0.70068	0.72829	0.70125	0.70375	0.70279	0.68722	0.69978
xerces-1.2⇒ant-1.6	0.10560	0.10560	0.22229	0.17709	0.32327	0.33732	0.58502
poi-2.0⇒camel-1.0	0.51533	0.51533	0.53093	0.52156	0.51775	0.44761	0.53230
synapse-1.2⇒camel-1.0	0.50191	0.49745	0.50133	0.51219	0.51349	0.47782	0.49583
ant-1.6⇒camel-1.0	0.52197	0.44549	0.52409	0.54478	0.54461	0.53928	0.54381
log4j-1.1⇒camel-1.0	0.53764	0.53764	0.54117	0.45860	0.45602	0.45489	0.44583
jedit-4.0.0⇒camel-1.0	0.51063	0.51001	0.50995	0.52665	0.53245	0.52515	0.52672
xerces-1.2⇒camel-1.0	0.13457	0.13457	0.06185	0.25168	0.23281	0.18793	0.50365
poi-2.0⇒log4j-1	0.58792	0.58792	0.61206	0.57526	0.59285	0.45773	0.58384
synapse-1.2⇒log4j-1	0.68611	0.69138	0.68737	0.67088	0.68608	0.62850	0.67490
ant-1.6⇒log4j-1	0.76187	0.74172	0.77677	0.76672	0.75109	0.67993	0.70376
camel-1.0⇒log4j-1	0.29166	0.29166	0.33920	0.29150	0.32707	0.46646	0.39334
jedit-4.0.0⇒log4j-1	0.57168	0.59938	0.64452	0.70678	0.73169	0.65459	0.67880
xerces-1.2⇒log4j-1	0.10970	0.10970	0.16635	0.10965	0.17543	0.25202	0.61351
poi-2.0⇒jedit-4.0	0.61254	0.61254	0.63127	0.57688	0.62851	0.60781	0.65966
synapse-1.2⇒jedit-4.0	0.49942	0.52421	0.52140	0.53494	0.57019	0.60792	0.59458
ant-1.6⇒jedit-4.0	0.68427	0.66224	0.69702	0.66450	0.68916	0.69761	0.69760
camel-1.0⇒jedit-4.0	0.28229	0.28229	0.56286	0.28921	0.49589	0.50507	0.54892
log4j-1.1⇒jedit-4.0	0.53730	0.53730	0.54234	0.54756	0.56413	0.63679	0.60983
xerces-1.2⇒jedit-4.0	0.08276	0.08276	0.67742	0.09640	0.67796	0.64947	0.65056
poi-2.0⇒xerces-1.2	0.49976	0.49976	0.49763	0.53439	0.53025	0.46279	0.52605
synapse-1.2⇒xerces-1.2	0.44563	0.46448	0.45506	0.46654	0.47000	0.44472	0.50265
ant-1.6⇒xerces-1.2	0.44604	0.41853	0.44448	0.48442	0.49369	0.50467	0.51165
camel-1.0⇒xerces-1.2	0.34572	0.34572	0.35516	0.36466	0.37791	0.41089	0.46207
log4j-1.1⇒xerces-1.2	0.47163	0.47163	0.47105	0.51824	0.51775	0.48011	0.49797
jedit-4.0.0⇒xerces-1.2	0.41782	0.47984	0.43992	0.49010	0.49500	0.44573	0.53063
Average	0.44025	0.44611	0.47141	0.45297	0.48199	0.49243	0.55298

Table 4: The balance in 15% target project datas

Source⇒Target	NB	adaboost	NN	NB+WC	NN+WC	DTB	Tsbbing
synapse-1.2⇒poi-2.0	0.45171	0.45726	0.44621	0.44444	0.44125	0.46773	0.52717
ant-1.6⇒poi-2.0	0.51523	0.55890	0.50092	0.51045	0.50002	0.50282	0.51824
camel-1.0⇒poi-2.0	0.36599	0.36599	0.37410	0.36868	0.37579	0.43300	0.41039
log4j-1.1⇒poi-2.0	0.45165	0.45165	0.45623	0.44577	0.44820	0.47303	0.50297
jedit-4.0.0⇒poi-2.0	0.51998	0.61328	0.50631	0.50773	0.50397	0.49084	0.53586
xerces-1.2⇒poi-2.0	0.30975	0.30975	0.29371	0.34842	0.30437	0.36358	0.59052
poi-2.0⇒synapse-1.2	0.59480	0.59480	0.67158	0.53102	0.56438	0.57829	0.55065
ant-1.6⇒synapse-1.2	0.66349	0.65517	0.65881	0.65023	0.65142	0.65491	0.64275
camel-1.0⇒synapse-1.2	0.36370	0.36370	0.39787	0.36709	0.40102	0.46209	0.46522
log4j-1.1⇒synapse-1.2	0.51823	0.51823	0.51772	0.51805	0.51456	0.56733	0.57729
jedit-4.0.0⇒synapse-1.2	0.68285	0.69455	0.67398	0.66610	0.65844	0.65505	0.64660
xerces-1.2⇒synapse-1.2	0.33147	0.33147	0.33025	0.33757	0.33265	0.35587	0.57807
poi-2.0⇒ant-1.6	0.59263	0.59263	0.58593	0.58237	0.58571	0.55207	0.61001
synapse-1.2⇒ant-1.6	0.55514	0.59028	0.55135	0.58462	0.58316	0.58651	0.62846
camel-1.0⇒ant-1.6	0.38612	0.38612	0.39181	0.38828	0.40681	0.45913	0.49418
log4j-1.1⇒ant-1.6	0.57237	0.57237	0.57221	0.59414	0.59330	0.63938	0.64844
jedit-4.0.0⇒ant-1.6	0.70059	0.72826	0.70119	0.69944	0.69790	0.68454	0.69685
xerces-1.2⇒ant-1.6	0.33165	0.33165	0.37790	0.35978	0.42603	0.43390	0.59258
poi-2.0⇒camel-1.0	0.51892	0.51892	0.53290	0.53832	0.53591	0.49496	0.54610
synapse-1.2⇒camel-1.0	0.51198	0.50348	0.51122	0.52867	0.52973	0.50790	0.51858
ant-1.6⇒camel-1.0	0.52312	0.48849	0.52526	0.54895	0.54940	0.54794	0.54893
log4j-1.1⇒camel-1.0	0.53914	0.53914	0.54293	0.49757	0.49582	0.49588	0.49091
jedit-4.0.0⇒camel-1.0	0.51714	0.52553	0.51905	0.53159	0.53711	0.53776	0.53275
xerces-1.2⇒camel-1.0	0.34170	0.34170	0.31272	0.38873	0.38006	0.35870	0.51570
poi-2.0⇒log4j-1	0.59462	0.59462	0.61738	0.58524	0.59965	0.50693	0.59667
synapse-1.2⇒log4j-1	0.68345	0.69114	0.68720	0.66876	0.68310	0.63010	0.67390
ant-1.6⇒log4j-1	0.74871	0.71986	0.77182	0.76383	0.74877	0.67892	0.70659
camel-1.0⇒log4j-1	0.41416	0.41416	0.44120	0.41403	0.43230	0.51103	0.46983
jedit-4.0.0⇒log4j-1	0.58244	0.60593	0.64179	0.70455	0.72860	0.65226	0.67859
xerces-1.2⇒log4j-1	0.33354	0.33354	0.36626	0.33334	0.36957	0.38643	0.61712
poi-2.0⇒jedit-4.0	0.61678	0.61678	0.63153	0.58792	0.63149	0.61272	0.66038
synapse-1.2⇒jedit-4.0	0.53071	0.54635	0.54788	0.55616	0.58309	0.61282	0.60297
ant-1.6⇒jedit-4.0	0.67888	0.66233	0.69360	0.66096	0.68541	0.69558	0.69523
camel-1.0⇒jedit-4.0	0.40037	0.40037	0.57313	0.40754	0.52933	0.53487	0.56801
log4j-1.1⇒jedit-4.0	0.55718	0.55718	0.56205	0.56671	0.57805	0.63809	0.61612
xerces-1.2⇒jedit-4.0	0.32049	0.32049	0.67693	0.32341	0.67725	0.65003	0.65135
poi-2.0⇒xerces-1.2	0.51802	0.51802	0.51544	0.54813	0.54489	0.47003	0.54414
synapse-1.2⇒xerces-1.2	0.46474	0.49036	0.47512	0.47927	0.47940	0.44789	0.51412
ant-1.6⇒xerces-1.2	0.48928	0.47815	0.48814	0.51669	0.52309	0.52250	0.54251
camel-1.0⇒xerces-1.2	0.34653	0.34653	0.35746	0.37001	0.38820	0.41194	0.48327
log4j-1.1⇒xerces-1.2	0.47862	0.47862	0.47793	0.52816	0.52765	0.48356	0.52944
jedit-4.0.0⇒xerces-1.2	0.47300	0.51166	0.48624	0.52325	0.52451	0.47554	0.55351
Average	0.50216	0.50761	0.52293	0.51133	0.52979	0.52915	0.57317

Table 5: The F1 in 10% target project datas

Source⇒Target	NB	adaboost	NN	NB+WC	NN+WC	DTB	Tsbagging
synapse-1.2⇒poi-2.0	0.21735	0.21904	0.21550	0.21404	0.21333	0.21665	0.22607
ant-1.6⇒poi-2.0	0.22358	0.22889	0.21878	0.22455	0.21662	0.19930	0.21584
camel-1.0⇒poi-2.0	0.20549	0.20549	0.21303	0.20572	0.20608	0.21133	0.22765
log4j-1.1⇒poi-2.0	0.21467	0.21467	0.21978	0.22093	0.22176	0.20868	0.21572
jedit-4.0.0⇒poi-2.0	0.21620	0.26957	0.20484	0.20740	0.20257	0.19213	0.21595
xerces-1.2⇒poi-2.0	0.03518	0.03518	0.00408	0.07843	0.01185	0.09972	0.24428
poi-2.0⇒synapse-1.2	0.54364	0.54364	0.58095	0.55530	0.56321	0.59415	0.55864
ant-1.6⇒synapse-1.2	0.59530	0.55626	0.58044	0.58767	0.58804	0.58745	0.59561
camel-1.0⇒synapse-1.2	0.50718	0.50718	0.51584	0.50702	0.51367	0.54653	0.52893
log4j-1.1⇒synapse-1.2	0.53011	0.53011	0.54023	0.55312	0.54942	0.54602	0.56122
jedit-4.0.0⇒synapse-1.2	0.58037	0.59720	0.56968	0.57850	0.57380	0.57984	0.57098
xerces-1.2⇒synapse-1.2	0.10306	0.10306	0.08632	0.10200	0.10213	0.09281	0.44261
poi-2.0⇒ant-1.6	0.52069	0.52069	0.52199	0.51521	0.51697	0.50217	0.52821
synapse-1.2⇒ant-1.6	0.49947	0.50619	0.49896	0.50766	0.50633	0.51329	0.51819
camel-1.0⇒ant-1.6	0.41971	0.41971	0.42529	0.42608	0.42949	0.46786	0.45333
log4j-1.1⇒ant-1.6	0.50175	0.50175	0.50175	0.50880	0.50880	0.53242	0.52713
jedit-4.0.0⇒ant-1.6	0.55276	0.59208	0.55533	0.56040	0.56422	0.53480	0.57201
xerces-1.2⇒ant-1.6	0.08695	0.08695	0.18041	0.13622	0.21772	0.31335	0.44708
poi-2.0⇒camel-1.0	0.46086	0.46086	0.46950	0.51667	0.51742	0.53499	0.51786
synapse-1.2⇒camel-1.0	0.47467	0.45434	0.47351	0.50601	0.50761	0.50633	0.49581
ant-1.6⇒camel-1.0	0.42734	0.36304	0.42773	0.48021	0.48243	0.49156	0.48163
log4j-1.1⇒camel-1.0	0.47334	0.47334	0.47772	0.51292	0.51226	0.51046	0.51613
jedit-4.0.0⇒camel-1.0	0.40347	0.40569	0.40315	0.45689	0.46236	0.49466	0.45534
xerces-1.2⇒camel-1.0	0.12117	0.12117	0.05679	0.18614	0.17253	0.14243	0.47279
poi-2.0⇒log4j-1	0.60153	0.60153	0.59802	0.60798	0.59661	0.53887	0.54460
synapse-1.2⇒log4j-1	0.61422	0.59282	0.62964	0.62118	0.62354	0.59303	0.62480
ant-1.6⇒log4j-1	0.70303	0.70573	0.70235	0.66764	0.68613	0.63870	0.63290
camel-1.0⇒log4j-1	0.54205	0.54205	0.56575	0.54205	0.54003	0.56057	0.55413
jedit-4.0.0⇒log4j-1	0.50810	0.50894	0.56308	0.57968	0.65088	0.61637	0.57729
xerces-1.2⇒log4j-1	0.09821	0.09821	0.02500	0.09787	0.01818	0.22218	0.39049
poi-2.0⇒jedit-4.0	0.47839	0.47839	0.46148	0.46862	0.47671	0.49122	0.47553
synapse-1.2⇒jedit-4.0	0.44287	0.44009	0.47216	0.45569	0.48161	0.49349	0.49300
ant-1.6⇒jedit-4.0	0.53598	0.48923	0.53656	0.52952	0.53015	0.53153	0.53275
camel-1.0⇒jedit-4.0	0.38182	0.38182	0.43417	0.39133	0.44492	0.45252	0.45857
log4j-1.1⇒jedit-4.0	0.44633	0.44633	0.45268	0.46468	0.46678	0.47041	0.48710
xerces-1.2⇒jedit-4.0	0.06342	0.06342	0.51080	0.07260	0.51579	0.51123	0.51133
poi-2.0⇒xerces-1.2	0.27102	0.27102	0.26847	0.30633	0.28799	0.24271	0.28724
synapse-1.2⇒xerces-1.2	0.20992	0.23800	0.21827	0.22005	0.22003	0.20900	0.26393
ant-1.6⇒xerces-1.2	0.25193	0.26689	0.25161	0.27925	0.27626	0.26298	0.30391
camel-1.0⇒xerces-1.2	0.15626	0.15626	0.15995	0.16707	0.17926	0.19847	0.23449
log4j-1.1⇒xerces-1.2	0.22040	0.22040	0.22040	0.23348	0.23372	0.24739	0.31214
jedit-4.0.0⇒xerces-1.2	0.23927	0.27693	0.24605	0.28141	0.28179	0.25688	0.32005
Average	0.37331	0.37367	0.38710	0.38891	0.40169	0.40849	0.44270

Table 6: The MCC in 10% target project datas

Source⇒Target	NB	adaboost	NN	NB+WC	NN+WC	DTB	Tsbbing
synapse-1.2⇒poi-2.0	0.04146	0.04680	0.03552	0.03122	0.02901	0.04179	0.06015
ant-1.6⇒poi-2.0	0.07266	0.08273	0.06087	0.07609	0.05565	0.01819	0.05374
camel-1.0⇒poi-2.0	0.00197	0.00197	0.03918	0.00316	0.00712	0.03155	0.06879
log4j-1.1⇒poi-2.0	0.02798	0.02798	0.04388	0.04775	0.05055	0.01709	0.03109
jedit-4.0.0⇒poi-2.0	0.04572	0.14578	0.02065	0.02578	0.01465	-0.00551	0.04474
xerces-1.2⇒poi-2.0	-0.05519	-0.05519	-0.08453	-0.01737	-0.07864	-0.01210	0.13389
poi-2.0⇒synapse-1.2	0.22810	0.22810	0.31670	0.24838	0.27762	0.33512	0.27296
ant-1.6⇒synapse-1.2	0.34214	0.29559	0.31677	0.32688	0.32858	0.32876	0.35227
camel-1.0⇒synapse-1.2	0.07812	0.07812	0.10231	0.07821	0.10008	0.22315	0.16238
log4j-1.1⇒synapse-1.2	0.18415	0.18415	0.20913	0.24222	0.23284	0.23679	0.26350
jedit-4.0.0⇒synapse-1.2	0.33082	0.35833	0.31620	0.32527	0.31654	0.31941	0.31014
xerces-1.2⇒synapse-1.2	0.02056	0.02056	-0.00372	-0.01086	0.00313	-0.06274	0.23093
poi-2.0⇒ant-1.6	0.31631	0.31631	0.32147	0.31030	0.31329	0.28237	0.33240
synapse-1.2⇒ant-1.6	0.28572	0.29169	0.28560	0.30237	0.29918	0.31243	0.31474
camel-1.0⇒ant-1.6	0.06981	0.06981	0.09182	0.09539	0.10807	0.22748	0.18147
log4j-1.1⇒ant-1.6	0.27726	0.27726	0.27726	0.29384	0.29384	0.32948	0.32528
jedit-4.0.0⇒ant-1.6	0.35812	0.42032	0.36236	0.37204	0.37795	0.33238	0.39119
xerces-1.2⇒ant-1.6	0.00586	0.00586	0.02115	0.02640	0.04636	0.12517	0.24598
poi-2.0⇒camel-1.0	0.04845	0.04845	0.07310	0.11824	0.11859	0.14025	0.13895
synapse-1.2⇒camel-1.0	0.05486	0.02581	0.05313	0.10936	0.11354	0.09542	0.09865
ant-1.6⇒camel-1.0	0.04561	0.09218	0.04673	0.09870	0.10026	0.10816	0.10045
log4j-1.1⇒camel-1.0	0.08919	0.08919	0.09612	0.11222	0.11057	0.10984	0.11353
jedit-4.0.0⇒camel-1.0	0.04018	0.08971	0.05415	0.07659	0.08082	0.10837	0.08168
xerces-1.2⇒camel-1.0	-0.01572	-0.01572	-0.08612	-0.00798	-0.01124	-0.09313	0.09873
poi-2.0⇒log4j-1	0.35992	0.35992	0.35256	0.37309	0.35028	0.23715	0.25212
synapse-1.2⇒log4j-1	0.37414	0.34903	0.41234	0.38719	0.39470	0.33250	0.40296
ant-1.6⇒log4j-1	0.57342	0.61782	0.55578	0.49759	0.50976	0.45798	0.46938
camel-1.0⇒log4j-1	0.19723	0.19723	0.25103	0.19723	0.18827	0.24226	0.22693
jedit-4.0.0⇒log4j-1	0.38971	0.31301	0.40960	0.42013	0.48522	0.40331	0.37800
xerces-1.2⇒log4j-1	0.02629	0.02629	-0.10293	0.02310	-0.11240	-0.02266	0.22173
poi-2.0⇒jedit-4.0	0.25230	0.25230	0.22643	0.24064	0.25664	0.27847	0.25459
synapse-1.2⇒jedit-4.0	0.18899	0.18180	0.25309	0.21759	0.27109	0.28933	0.28531
ant-1.6⇒jedit-4.0	0.36555	0.29402	0.36171	0.35571	0.35168	0.35186	0.35506
camel-1.0⇒jedit-4.0	0.00110	0.00110	0.16696	0.03118	0.18669	0.20640	0.22254
log4j-1.1⇒jedit-4.0	0.19852	0.19852	0.21350	0.23910	0.24477	0.25452	0.27873
xerces-1.2⇒jedit-4.0	-0.08398	-0.08398	0.32060	-0.09320	0.32188	0.30997	0.31651
poi-2.0⇒xerces-1.2	0.08079	0.08079	0.07624	0.11773	0.09186	-0.01771	0.08854
synapse-1.2⇒xerces-1.2	-0.03109	0.02916	-0.01354	-0.02039	-0.02186	-0.04965	0.07668
ant-1.6⇒xerces-1.2	0.07711	0.11999	0.07585	0.10634	0.10340	0.06771	0.14325
camel-1.0⇒xerces-1.2	-0.21544	-0.21544	-0.21143	-0.19035	-0.16711	-0.09859	0.01437
log4j-1.1⇒xerces-1.2	-0.02272	-0.02272	-0.02272	-0.01153	-0.01087	0.01852	0.13313
jedit-4.0.0⇒xerces-1.2	0.06524	0.10245	0.07110	0.10635	0.10639	0.05656	0.16396
Average	0.13551	0.14112	0.15157	0.14956	0.16283	0.16352	0.20694

Table 7: The g-measure in 10% target project datas

Source⇒Target	NB	adaboost	NN	NB+WC	NN+WC	DTB	Tsbagging
synapse-1.2⇒poi-2.0	0.37852	0.38743	0.37208	0.38522	0.37820	0.43156	0.46240
ant-1.6⇒poi-2.0	0.49228	0.56370	0.47518	0.48636	0.46330	0.48664	0.48378
camel-1.0⇒poi-2.0	0.19881	0.19881	0.21520	0.20069	0.22010	0.33574	0.37120
log4j-1.1⇒poi-2.0	0.38143	0.38143	0.38417	0.36505	0.36586	0.45224	0.40139
jedit-4.0.0⇒poi-2.0	0.51015	0.61152	0.49710	0.48873	0.48276	0.47325	0.50172
xerces-1.2⇒poi-2.0	0.05310	0.05310	0.00605	0.12413	0.01794	0.18421	0.46903
poi-2.0⇒synapse-1.2	0.58467	0.58467	0.66191	0.58286	0.62466	0.62105	0.61717
ant-1.6⇒synapse-1.2	0.66187	0.65538	0.65489	0.65104	0.65292	0.64830	0.67149
camel-1.0⇒synapse-1.2	0.18959	0.18959	0.24780	0.19477	0.25130	0.39922	0.37584
log4j-1.1⇒synapse-1.2	0.47605	0.47605	0.47768	0.48289	0.46992	0.56855	0.55189
jedit-4.0.0⇒synapse-1.2	0.67344	0.68803	0.66483	0.67078	0.66614	0.66012	0.65957
xerces-1.2⇒synapse-1.2	0.11254	0.11254	0.09392	0.11480	0.11355	0.10897	0.51170
poi-2.0⇒ant-1.6	0.59134	0.59134	0.58462	0.58850	0.58408	0.56410	0.62884
synapse-1.2⇒ant-1.6	0.53200	0.57739	0.52738	0.54951	0.54842	0.56569	0.59318
camel-1.0⇒ant-1.6	0.23632	0.23632	0.24324	0.24248	0.25879	0.38817	0.37878
log4j-1.1⇒ant-1.6	0.55325	0.55325	0.55325	0.55651	0.55651	0.63933	0.61025
jedit-4.0.0⇒ant-1.6	0.69973	0.73252	0.70195	0.70124	0.70513	0.67816	0.71080
xerces-1.2⇒ant-1.6	0.09783	0.09783	0.22824	0.16135	0.27980	0.37064	0.53637
poi-2.0⇒camel-1.0	0.51661	0.51661	0.53249	0.49902	0.49547	0.44585	0.51687
synapse-1.2⇒camel-1.0	0.50282	0.49841	0.50269	0.51023	0.51272	0.47944	0.50491
ant-1.6⇒camel-1.0	0.52141	0.44616	0.52189	0.54433	0.54393	0.53672	0.54190
log4j-1.1⇒camel-1.0	0.54255	0.54255	0.54554	0.48839	0.48773	0.49322	0.46831
jedit-4.0.0⇒camel-1.0	0.50492	0.50363	0.50474	0.53477	0.53619	0.53150	0.53147
xerces-1.2⇒camel-1.0	0.13714	0.13714	0.06415	0.22179	0.20379	0.17879	0.53806
poi-2.0⇒log4j-1	0.58836	0.58836	0.57982	0.60165	0.57299	0.48678	0.56466
synapse-1.2⇒log4j-1	0.68076	0.68347	0.71227	0.67550	0.69747	0.62817	0.70121
ant-1.6⇒log4j-1	0.75194	0.72960	0.76178	0.73671	0.75698	0.70004	0.69043
camel-1.0⇒log4j-1	0.28088	0.28088	0.39386	0.28088	0.32507	0.45690	0.44371
jedit-4.0.0⇒log4j-1	0.54739	0.58243	0.61925	0.63940	0.71771	0.67072	0.65009
xerces-1.2⇒log4j-1	0.10637	0.10637	0.02621	0.10636	0.02134	0.28553	0.44933
poi-2.0⇒jedit-4.0	0.60899	0.60899	0.62868	0.57241	0.61435	0.61757	0.61819
synapse-1.2⇒jedit-4.0	0.50139	0.52859	0.55467	0.52993	0.57699	0.60330	0.62777
ant-1.6⇒jedit-4.0	0.68498	0.65510	0.69606	0.67430	0.68721	0.69636	0.69478
camel-1.0⇒jedit-4.0	0.28746	0.28746	0.55845	0.29020	0.50835	0.50782	0.55998
log4j-1.1⇒jedit-4.0	0.53730	0.53730	0.53082	0.54910	0.54828	0.63189	0.61715
xerces-1.2⇒jedit-4.0	0.08036	0.08036	0.66562	0.09621	0.67419	0.64884	0.66284
poi-2.0⇒xerces-1.2	0.51351	0.51351	0.51202	0.53368	0.51329	0.47294	0.52542
synapse-1.2⇒xerces-1.2	0.44296	0.46166	0.45035	0.45367	0.45457	0.44428	0.47218
ant-1.6⇒xerces-1.2	0.44350	0.41774	0.44462	0.49036	0.48480	0.49690	0.50633
camel-1.0⇒xerces-1.2	0.35625	0.35625	0.35817	0.37207	0.38461	0.43281	0.45199
log4j-1.1⇒xerces-1.2	0.47281	0.47281	0.47281	0.46904	0.46945	0.49220	0.56267
jedit-4.0.0⇒xerces-1.2	0.41581	0.48428	0.42957	0.49610	0.49758	0.49002	0.53473
Average	0.43927	0.44549	0.46800	0.45031	0.47439	0.50011	0.54691

Table 8: The balance in 10% target project datas

Source⇒Target	NB	adaboost	NN	NB+WC	NN+WC	DTB	Tsbbing
synapse-1.2⇒poi-2.0	0.45053	0.45577	0.44637	0.45203	0.44815	0.47638	0.49994
ant-1.6⇒poi-2.0	0.51697	0.56402	0.50463	0.51390	0.49688	0.49851	0.50736
camel-1.0⇒poi-2.0	0.36717	0.36717	0.37586	0.36801	0.37578	0.42868	0.45966
log4j-1.1⇒poi-2.0	0.44956	0.44956	0.45347	0.44480	0.44562	0.48172	0.45991
jedit-4.0.0⇒poi-2.0	0.52085	0.61158	0.50591	0.50250	0.49594	0.48390	0.51668
xerces-1.2⇒poi-2.0	0.31051	0.31051	0.29364	0.33844	0.29797	0.36990	0.53460
poi-2.0⇒synapse-1.2	0.59187	0.59187	0.66182	0.59522	0.62883	0.62563	0.62360
ant-1.6⇒synapse-1.2	0.66120	0.65540	0.65517	0.65129	0.65283	0.64945	0.66957
camel-1.0⇒synapse-1.2	0.36607	0.36607	0.39936	0.36822	0.39983	0.47044	0.46332
log4j-1.1⇒synapse-1.2	0.51455	0.51455	0.51675	0.52114	0.51260	0.58042	0.57031
jedit-4.0.0⇒synapse-1.2	0.67343	0.68801	0.66484	0.67076	0.66611	0.66041	0.65976
xerces-1.2⇒synapse-1.2	0.33425	0.33425	0.32859	0.33451	0.34046	0.33061	0.56864
poi-2.0⇒ant-1.6	0.59787	0.59787	0.59214	0.59725	0.59359	0.57948	0.62958
synapse-1.2⇒ant-1.6	0.55383	0.58771	0.55050	0.56611	0.56535	0.57771	0.60105
camel-1.0⇒ant-1.6	0.38592	0.38592	0.38972	0.38944	0.39707	0.46428	0.45738
log4j-1.1⇒ant-1.6	0.56959	0.56959	0.56959	0.57238	0.57238	0.63964	0.61399
jedit-4.0.0⇒ant-1.6	0.69970	0.73250	0.70193	0.69905	0.70282	0.67758	0.70811
xerces-1.2⇒ant-1.6	0.32854	0.32854	0.38016	0.35401	0.40429	0.45467	0.57409
poi-2.0⇒camel-1.0	0.52042	0.52042	0.53480	0.52292	0.52081	0.49416	0.53679
synapse-1.2⇒camel-1.0	0.51409	0.50548	0.51368	0.52787	0.53005	0.50816	0.52220
ant-1.6⇒camel-1.0	0.52247	0.48849	0.52299	0.54693	0.54694	0.54386	0.54582
log4j-1.1⇒camel-1.0	0.54413	0.54413	0.54733	0.51504	0.51447	0.51754	0.50346
jedit-4.0.0⇒camel-1.0	0.51215	0.52065	0.51496	0.53679	0.53842	0.54029	0.53575
xerces-1.2⇒camel-1.0	0.34269	0.34269	0.31427	0.37570	0.36845	0.35429	0.54342
poi-2.0⇒log4j-1	0.59443	0.59443	0.58811	0.60506	0.58309	0.52290	0.57495
synapse-1.2⇒log4j-1	0.67868	0.68339	0.71123	0.67215	0.69535	0.62904	0.69943
ant-1.6⇒log4j-1	0.73978	0.70812	0.75549	0.73306	0.75393	0.69688	0.68864
camel-1.0⇒log4j-1	0.40873	0.40873	0.48170	0.40873	0.43159	0.50466	0.49999
jedit-4.0.0⇒log4j-1	0.56476	0.59234	0.62092	0.64050	0.71686	0.66711	0.65771
xerces-1.2⇒log4j-1	0.33212	0.33212	0.30250	0.33206	0.30018	0.40290	0.51512
poi-2.0⇒jedit-4.0	0.61360	0.61360	0.62896	0.58300	0.61714	0.62147	0.62444
synapse-1.2⇒jedit-4.0	0.53199	0.54963	0.57084	0.55250	0.58784	0.61063	0.63072
ant-1.6⇒jedit-4.0	0.68018	0.65546	0.69317	0.67056	0.68480	0.69581	0.69302
camel-1.0⇒jedit-4.0	0.40330	0.40330	0.56903	0.40725	0.53742	0.53634	0.57836
log4j-1.1⇒jedit-4.0	0.55668	0.55668	0.55289	0.56709	0.56647	0.63306	0.62162
xerces-1.2⇒jedit-4.0	0.31930	0.31930	0.66560	0.32388	0.67365	0.64911	0.66237
poi-2.0⇒xerces-1.2	0.52881	0.52881	0.52704	0.54974	0.53323	0.48112	0.53969
synapse-1.2⇒xerces-1.2	0.46304	0.48874	0.47183	0.46972	0.46984	0.45604	0.50470
ant-1.6⇒xerces-1.2	0.48776	0.47759	0.48821	0.51877	0.51510	0.51525	0.53279
camel-1.0⇒xerces-1.2	0.35711	0.35711	0.35993	0.37337	0.38826	0.43321	0.47712
log4j-1.1⇒xerces-1.2	0.47920	0.47920	0.47920	0.48112	0.48155	0.50005	0.56961
jedit-4.0.0⇒xerces-1.2	0.47161	0.51447	0.47972	0.52388	0.52480	0.51111	0.55701
Average	0.50141	0.50704	0.52107	0.50897	0.52564	0.53510	0.56982

Table 9: The F1 in 25% target project datas

Source⇒Target	NB	adaboost	NN	NB+WC	NN+WC	DTB	Tsbagging
synapse-1.2⇒poi-2.0	0.22157	0.22310	0.21842	0.21241	0.21091	0.22626	0.22908
ant-1.6⇒poi-2.0	0.22020	0.22000	0.21698	0.21963	0.21746	0.20464	0.22265
camel-1.0⇒poi-2.0	0.19981	0.19981	0.20483	0.20016	0.20066	0.21269	0.20927
log4j-1.1⇒poi-2.0	0.20682	0.20682	0.20938	0.21069	0.21127	0.20021	0.21657
jedit-4.0.0⇒poi-2.0	0.22222	0.27819	0.21415	0.21936	0.21264	0.21727	0.23975
xerces-1.2⇒poi-2.0	0.03698	0.03698	0.01925	0.12947	0.03499	0.17119	0.32523
poi-2.0⇒synapse-1.2	0.53020	0.53020	0.56072	0.54476	0.55603	0.58603	0.56622
ant-1.6⇒synapse-1.2	0.59441	0.55583	0.58661	0.58674	0.59043	0.59660	0.58627
camel-1.0⇒synapse-1.2	0.51287	0.51287	0.53354	0.51254	0.52904	0.54950	0.54653
log4j-1.1⇒synapse-1.2	0.53147	0.53147	0.53997	0.55096	0.55034	0.55832	0.57484
jedit-4.0.0⇒synapse-1.2	0.57705	0.59750	0.56570	0.58251	0.57443	0.58706	0.56546
xerces-1.2⇒synapse-1.2	0.09981	0.09981	0.13578	0.12385	0.18391	0.11896	0.46766
poi-2.0⇒ant-1.6	0.51313	0.51313	0.51825	0.52088	0.52605	0.49653	0.52400
synapse-1.2⇒ant-1.6	0.49141	0.50022	0.49581	0.50759	0.50663	0.50331	0.52212
camel-1.0⇒ant-1.6	0.42134	0.42134	0.43350	0.43293	0.44721	0.47112	0.47851
log4j-1.1⇒ant-1.6	0.50684	0.50684	0.50685	0.52035	0.52091	0.54352	0.53935
jedit-4.0.0⇒ant-1.6	0.55680	0.59558	0.55947	0.57592	0.57714	0.57341	0.57256
xerces-1.2⇒ant-1.6	0.09629	0.09629	0.21004	0.20584	0.41154	0.46481	0.49980
poi-2.0⇒camel-1.0	0.45753	0.45753	0.46614	0.53492	0.53744	0.54715	0.53557
synapse-1.2⇒camel-1.0	0.47598	0.45369	0.47366	0.51662	0.52071	0.52348	0.52179
ant-1.6⇒camel-1.0	0.43041	0.36565	0.43087	0.50931	0.51085	0.51060	0.50520
log4j-1.1⇒camel-1.0	0.47458	0.47458	0.47878	0.52942	0.52860	0.53337	0.53452
jedit-4.0.0⇒camel-1.0	0.40080	0.40287	0.40315	0.49780	0.49773	0.50859	0.48527
xerces-1.2⇒camel-1.0	0.12046	0.12046	0.05480	0.24536	0.23657	0.21797	0.51423
poi-2.0⇒log4j-1	0.59097	0.59097	0.58852	0.59660	0.58745	0.54995	0.59083
synapse-1.2⇒log4j-1	0.61788	0.60483	0.62145	0.62101	0.62703	0.59681	0.61619
ant-1.6⇒log4j-1	0.71470	0.70824	0.71635	0.67219	0.67108	0.66448	0.66505
camel-1.0⇒log4j-1	0.54464	0.54464	0.56618	0.53442	0.53789	0.56188	0.55143
jedit-4.0.0⇒log4j-1	0.48857	0.49348	0.54785	0.62464	0.64750	0.58833	0.60487
xerces-1.2⇒log4j-1	0.09814	0.09814	0.04769	0.09659	0.06657	0.32480	0.48249
poi-2.0⇒jedit-4.0	0.48378	0.48378	0.46474	0.48464	0.49805	0.50193	0.51403
synapse-1.2⇒jedit-4.0	0.43249	0.42865	0.45564	0.45812	0.47541	0.49398	0.49633
ant-1.6⇒jedit-4.0	0.54366	0.49603	0.55030	0.53467	0.53667	0.54448	0.53380
camel-1.0⇒jedit-4.0	0.38557	0.38557	0.42807	0.40757	0.45313	0.45366	0.48725
log4j-1.1⇒jedit-4.0	0.44737	0.44737	0.46869	0.47181	0.48111	0.49272	0.50239
xerces-1.2⇒jedit-4.0	0.05482	0.05482	0.51140	0.07989	0.51230	0.50494	0.52048
poi-2.0⇒xerces-1.2	0.27907	0.27907	0.27729	0.34832	0.32793	0.25816	0.34697
synapse-1.2⇒xerces-1.2	0.21435	0.24253	0.22239	0.28530	0.28035	0.24668	0.30398
ant-1.6⇒xerces-1.2	0.23889	0.24929	0.24249	0.27539	0.28133	0.24288	0.30749
camel-1.0⇒xerces-1.2	0.15675	0.15675	0.16420	0.18071	0.19970	0.19800	0.26158
log4j-1.1⇒xerces-1.2	0.21469	0.21469	0.21403	0.28428	0.28507	0.28617	0.31669
jedit-4.0.0⇒xerces-1.2	0.22928	0.26477	0.24437	0.28537	0.28231	0.22202	0.30742
Average	0.37225	0.37249	0.38972	0.40313	0.42010	0.42511	0.46171

Table 10: The MCC in 25% target project datas

Source⇒Target	NB	adaboost	NN	NB+WC	NN+WC	DTB	Tsbbing
synapse-1.2⇒poi-2.0	0.05035	0.05501	0.04051	0.02175	0.01782	0.06524	0.06665
ant-1.6⇒poi-2.0	0.06888	0.07001	0.06116	0.06832	0.06312	0.03463	0.07734
camel-1.0⇒poi-2.0	-0.01118	-0.01118	0.01442	-0.00903	-0.00218	0.04958	0.03677
log4j-1.1⇒poi-2.0	0.02330	0.02330	0.03109	0.03560	0.03761	0.00941	0.05017
jedit-4.0.0⇒poi-2.0	0.05373	0.15577	0.03593	0.04613	0.02971	0.04271	0.09112
xerces-1.2⇒poi-2.0	-0.05347	-0.05347	-0.07016	0.03448	-0.06040	-0.00094	0.22189
poi-2.0⇒synapse-1.2	0.20689	0.20689	0.28795	0.22937	0.25892	0.32027	0.28751
ant-1.6⇒synapse-1.2	0.34184	0.29659	0.33152	0.32608	0.33501	0.34762	0.33912
camel-1.0⇒synapse-1.2	0.07531	0.07531	0.13499	0.07527	0.12319	0.21456	0.19087
log4j-1.1⇒synapse-1.2	0.18588	0.18588	0.20678	0.23634	0.23487	0.25745	0.29421
jedit-4.0.0⇒synapse-1.2	0.32527	0.35805	0.30844	0.32505	0.30632	0.32037	0.29081
xerces-1.2⇒synapse-1.2	0.02141	0.02141	0.05379	0.00235	0.07230	-0.03981	0.23907
poi-2.0⇒ant-1.6	0.31232	0.31232	0.32593	0.32045	0.33195	0.28966	0.33420
synapse-1.2⇒ant-1.6	0.27652	0.28719	0.28793	0.30632	0.30476	0.30008	0.33066
camel-1.0⇒ant-1.6	0.06295	0.06295	0.09873	0.10948	0.15250	0.22850	0.23991
log4j-1.1⇒ant-1.6	0.28163	0.28163	0.28200	0.30780	0.30946	0.34729	0.33855
jedit-4.0.0⇒ant-1.6	0.35986	0.42155	0.36445	0.39313	0.39551	0.38933	0.38788
xerces-1.2⇒ant-1.6	0.01532	0.01532	0.05505	0.07133	0.22275	0.26642	0.29212
poi-2.0⇒camel-1.0	0.03682	0.03682	0.06086	0.14069	0.14461	0.15724	0.14024
synapse-1.2⇒camel-1.0	0.06439	0.03074	0.06066	0.12416	0.13364	0.12908	0.13650
ant-1.6⇒camel-1.0	0.04939	0.09523	0.05073	0.12176	0.12408	0.11233	0.11659
log4j-1.1⇒camel-1.0	0.09166	0.09166	0.09786	0.13639	0.13434	0.14573	0.15212
jedit-4.0.0⇒camel-1.0	0.03497	0.08675	0.05209	0.10638	0.10656	0.10983	0.09542
xerces-1.2⇒camel-1.0	-0.01612	-0.01612	-0.09768	0.01274	-0.00094	-0.05850	0.11901
poi-2.0⇒log4j-1	0.34681	0.34681	0.34874	0.35831	0.33868	0.25597	0.34083
synapse-1.2⇒log4j-1	0.37894	0.36861	0.39871	0.38509	0.39654	0.33746	0.37790
ant-1.6⇒log4j-1	0.58890	0.62453	0.56073	0.47258	0.46550	0.45587	0.46184
camel-1.0⇒log4j-1	0.19278	0.19278	0.23627	0.15317	0.16937	0.23757	0.20891
jedit-4.0.0⇒log4j-1	0.36819	0.29175	0.39534	0.44475	0.45811	0.33994	0.39918
xerces-1.2⇒log4j-1	0.01931	0.01931	-0.09520	0.00468	-0.04716	0.08600	0.26322
poi-2.0⇒jedit-4.0	0.24747	0.24747	0.22287	0.25445	0.27782	0.28604	0.30378
synapse-1.2⇒jedit-4.0	0.17792	0.16895	0.23225	0.23304	0.26698	0.29587	0.30022
ant-1.6⇒jedit-4.0	0.37375	0.30008	0.38006	0.36137	0.36069	0.36978	0.35436
camel-1.0⇒jedit-4.0	0.00603	0.00603	0.15164	0.07677	0.20063	0.20544	0.27256
log4j-1.1⇒jedit-4.0	0.19507	0.19507	0.24020	0.24925	0.26786	0.28423	0.30455
xerces-1.2⇒jedit-4.0	-0.09664	-0.09664	0.32385	-0.10951	0.32388	0.30976	0.33705
poi-2.0⇒xerces-1.2	0.08842	0.08842	0.08528	0.18916	0.16233	-0.00184	0.18799
synapse-1.2⇒xerces-1.2	-0.02024	0.03874	-0.00514	0.08130	0.07233	0.00823	0.13593
ant-1.6⇒xerces-1.2	0.06153	0.09980	0.06553	0.09460	0.10304	0.01729	0.13992
camel-1.0⇒xerces-1.2	-0.22329	-0.22329	-0.20899	-0.16741	-0.12991	-0.11638	0.03224
log4j-1.1⇒xerces-1.2	-0.03289	-0.03289	-0.03442	0.07680	0.07766	0.09670	0.14149
jedit-4.0.0⇒xerces-1.2	0.05384	0.08957	0.06745	0.11957	0.11435	-0.02059	0.14149
Average	0.13295	0.13845	0.15334	0.16239	0.18224	0.17822	0.22791

Table 11: The g-measure in 25% target project datas

Source⇒Target	NB	adaboost	NN	NB+WC	NN+WC	DTB	Tsbagging
synapse-1.2⇒poi-2.0	0.38074	0.38868	0.37675	0.37042	0.37071	0.42617	0.45927
ant-1.6⇒poi-2.0	0.49524	0.55273	0.48130	0.48179	0.46142	0.49206	0.48525
camel-1.0⇒poi-2.0	0.19317	0.19317	0.21137	0.19625	0.21277	0.34897	0.28550
log4j-1.1⇒poi-2.0	0.38311	0.38311	0.38385	0.36507	0.36358	0.42943	0.39939
jedit-4.0.0⇒poi-2.0	0.51533	0.61828	0.50396	0.48588	0.47565	0.47520	0.52197
xerces-1.2⇒poi-2.0	0.05480	0.05480	0.02943	0.19640	0.05736	0.32597	0.59033
poi-2.0⇒synapse-1.2	0.57678	0.57678	0.64922	0.54783	0.57960	0.59318	0.59626
ant-1.6⇒synapse-1.2	0.66258	0.65539	0.66496	0.64127	0.65185	0.65022	0.65322
camel-1.0⇒synapse-1.2	0.18791	0.18791	0.29682	0.19674	0.30897	0.39927	0.37863
log4j-1.1⇒synapse-1.2	0.47361	0.47361	0.46827	0.47211	0.46440	0.52560	0.54492
jedit-4.0.0⇒synapse-1.2	0.67074	0.68789	0.66144	0.66913	0.65455	0.63063	0.64789
xerces-1.2⇒synapse-1.2	0.10849	0.10849	0.14560	0.14066	0.20351	0.13909	0.52103
poi-2.0⇒ant-1.6	0.59380	0.59380	0.59029	0.61449	0.61738	0.53558	0.61936
synapse-1.2⇒ant-1.6	0.53161	0.58131	0.53248	0.57408	0.57092	0.56076	0.60824
camel-1.0⇒ant-1.6	0.22847	0.22847	0.27998	0.24928	0.32138	0.38710	0.42795
log4j-1.1⇒ant-1.6	0.55516	0.55516	0.55398	0.58427	0.58324	0.63916	0.63472
jedit-4.0.0⇒ant-1.6	0.69904	0.73123	0.70135	0.70383	0.70514	0.69837	0.70117
xerces-1.2⇒ant-1.6	0.10908	0.10908	0.26623	0.25724	0.54038	0.54407	0.57483
poi-2.0⇒camel-1.0	0.50962	0.50962	0.52496	0.46286	0.45602	0.38443	0.45397
synapse-1.2⇒camel-1.0	0.50765	0.50090	0.50713	0.49203	0.49517	0.45866	0.49529
ant-1.6⇒camel-1.0	0.52348	0.44842	0.52407	0.52789	0.52786	0.50584	0.52294
log4j-1.1⇒camel-1.0	0.54332	0.54332	0.54582	0.45766	0.45673	0.45985	0.47235
jedit-4.0.0⇒camel-1.0	0.50297	0.50150	0.50551	0.51744	0.52027	0.49840	0.53350
xerces-1.2⇒camel-1.0	0.13632	0.13632	0.06260	0.30054	0.29136	0.27931	0.48771
poi-2.0⇒log4j-1	0.58618	0.58618	0.59684	0.59424	0.57959	0.46732	0.59890
synapse-1.2⇒log4j-1	0.68212	0.69161	0.69969	0.66838	0.68288	0.62527	0.67829
ant-1.6⇒log4j-1	0.75930	0.72805	0.77737	0.74169	0.73540	0.71583	0.72148
camel-1.0⇒log4j-1	0.27774	0.27774	0.40839	0.27654	0.33671	0.45259	0.39525
jedit-4.0.0⇒log4j-1	0.52964	0.57107	0.60524	0.69869	0.71677	0.59919	0.67803
xerces-1.2⇒log4j-1	0.10699	0.10699	0.05721	0.10691	0.07803	0.39786	0.55067
poi-2.0⇒jedit-4.0	0.60148	0.60148	0.62539	0.56080	0.62134	0.60345	0.65043
synapse-1.2⇒jedit-4.0	0.49710	0.52296	0.52188	0.55300	0.58782	0.63753	0.64110
ant-1.6⇒jedit-4.0	0.68967	0.65968	0.70764	0.67333	0.68749	0.70436	0.69073
camel-1.0⇒jedit-4.0	0.29305	0.29305	0.55169	0.30287	0.49509	0.49543	0.57816
log4j-1.1⇒jedit-4.0	0.53395	0.53395	0.55531	0.55166	0.56675	0.63955	0.62187
xerces-1.2⇒jedit-4.0	0.07054	0.07054	0.67344	0.11215	0.66916	0.64845	0.67185
poi-2.0⇒xerces-1.2	0.51905	0.51905	0.51804	0.59801	0.57087	0.45156	0.59704
synapse-1.2⇒xerces-1.2	0.44777	0.46602	0.45635	0.52097	0.51412	0.48908	0.50783
ant-1.6⇒xerces-1.2	0.42268	0.39351	0.42822	0.49441	0.50220	0.48711	0.52555
camel-1.0⇒xerces-1.2	0.35254	0.35254	0.36099	0.38542	0.40415	0.42073	0.48448
log4j-1.1⇒xerces-1.2	0.46503	0.46503	0.46425	0.50713	0.50804	0.50975	0.55772
jedit-4.0.0⇒xerces-1.2	0.40958	0.47478	0.43955	0.49183	0.49161	0.46258	0.54245
Average	0.43780	0.44367	0.47416	0.46055	0.49139	0.50464	0.55494

Table 12: The balance in 25% target project datas.

Source⇒Target	NB	adaboost	NN	NB+WC	NN+WC	DTB	Tsbagging
synapse-1.2⇒poi-2.0	0.45286	0.45752	0.44935	0.44299	0.44178	0.47822	0.49939
ant-1.6⇒poi-2.0	0.51809	0.55355	0.50840	0.50977	0.49744	0.50653	0.51354
camel-1.0⇒poi-2.0	0.36385	0.36385	0.37253	0.36521	0.37173	0.43685	0.40637
log4j-1.1⇒poi-2.0	0.44931	0.44931	0.45116	0.44305	0.44257	0.46784	0.46283
jedit-4.0.0⇒poi-2.0	0.52593	0.61834	0.51409	0.50653	0.49672	0.49868	0.53937
xerces-1.2⇒poi-2.0	0.31134	0.31134	0.30245	0.36846	0.31367	0.42632	0.60543
poi-2.0⇒synapse-1.2	0.58437	0.58437	0.64926	0.56784	0.59703	0.60794	0.60944
ant-1.6⇒synapse-1.2	0.66196	0.65543	0.66481	0.64166	0.65153	0.64912	0.65365
camel-1.0⇒synapse-1.2	0.36525	0.36525	0.42918	0.36895	0.43427	0.47079	0.46723
log4j-1.1⇒synapse-1.2	0.51308	0.51308	0.51076	0.51408	0.50915	0.55095	0.56559
jedit-4.0.0⇒synapse-1.2	0.67072	0.68782	0.66145	0.66922	0.65487	0.63341	0.64832
xerces-1.2⇒synapse-1.2	0.33275	0.33275	0.35097	0.34437	0.38293	0.34312	0.57644
poi-2.0⇒ant-1.6	0.59990	0.59990	0.59627	0.62083	0.62193	0.55777	0.62335
synapse-1.2⇒ant-1.6	0.55368	0.59083	0.55391	0.58480	0.58230	0.57470	0.61267
camel-1.0⇒ant-1.6	0.38220	0.38220	0.41176	0.39278	0.43063	0.46381	0.48857
log4j-1.1⇒ant-1.6	0.57104	0.57104	0.57010	0.59376	0.59295	0.63918	0.63667
jedit-4.0.0⇒ant-1.6	0.69898	0.73113	0.70129	0.69878	0.69973	0.69400	0.69674
xerces-1.2⇒ant-1.6	0.33304	0.33304	0.39944	0.39654	0.57063	0.57548	0.58785
poi-2.0⇒camel-1.0	0.51396	0.51396	0.52781	0.50350	0.49994	0.46032	0.49819
synapse-1.2⇒camel-1.0	0.51858	0.50790	0.51764	0.51921	0.52212	0.49950	0.52198
ant-1.6⇒camel-1.0	0.52450	0.49010	0.52513	0.54044	0.54080	0.52583	0.53662
log4j-1.1⇒camel-1.0	0.54505	0.54505	0.54780	0.49995	0.49924	0.50180	0.51005
jedit-4.0.0⇒camel-1.0	0.51003	0.51903	0.51508	0.53133	0.53294	0.52027	0.53973
xerces-1.2⇒camel-1.0	0.34239	0.34239	0.31333	0.40962	0.40463	0.39336	0.51522
poi-2.0⇒log4j-1	0.59347	0.59347	0.60379	0.59999	0.58937	0.51215	0.60637
synapse-1.2⇒log4j-1	0.67974	0.69145	0.69810	0.66444	0.67879	0.62701	0.67604
ant-1.6⇒log4j-1	0.74734	0.70581	0.77371	0.74037	0.73268	0.71018	0.71707
camel-1.0⇒log4j-1	0.40790	0.40790	0.49001	0.40682	0.43615	0.50225	0.46972
jedit-4.0.0⇒log4j-1	0.55449	0.58447	0.61030	0.69996	0.71172	0.60610	0.67913
xerces-1.2⇒log4j-1	0.33260	0.33260	0.31309	0.33229	0.32197	0.47603	0.57913
poi-2.0⇒jedit-4.0	0.60714	0.60714	0.62555	0.57524	0.62399	0.60867	0.65142
synapse-1.2⇒jedit-4.0	0.52848	0.54466	0.54760	0.56944	0.59650	0.64051	0.64220
ant-1.6⇒jedit-4.0	0.68443	0.65984	0.70427	0.66896	0.68379	0.70218	0.68779
camel-1.0⇒jedit-4.0	0.40611	0.40611	0.56210	0.41609	0.52901	0.52824	0.58995
log4j-1.1⇒jedit-4.0	0.55422	0.55422	0.57221	0.56960	0.58130	0.64033	0.62625
xerces-1.2⇒jedit-4.0	0.31544	0.31544	0.67324	0.32800	0.66808	0.64885	0.66922
poi-2.0⇒xerces-1.2	0.53355	0.53355	0.53238	0.60671	0.58673	0.47761	0.60446
synapse-1.2⇒xerces-1.2	0.46897	0.49377	0.47741	0.53014	0.52391	0.49540	0.53213
ant-1.6⇒xerces-1.2	0.47441	0.46305	0.47794	0.51873	0.52520	0.49669	0.54488
camel-1.0⇒xerces-1.2	0.35332	0.35332	0.36261	0.38889	0.41178	0.42222	0.49784
log4j-1.1⇒xerces-1.2	0.47203	0.47203	0.47112	0.52595	0.52682	0.52959	0.56616
jedit-4.0⇒xerces-1.2	0.46699	0.50779	0.48472	0.52146	0.52165	0.47568	0.55946
Average	0.50056	0.50585	0.52438	0.51659	0.53669	0.53751	0.57654